CHAPTER 4

Military Manpower Assessment

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The Department of Defense (DoD) has a long history of providing technical, logistical, and manpower support to multiple federal agencies. One area of special military support has been its response to natural threats to our agricultural industry. For example, military aviation assets have been used for aerial insecticide dispersal flights to control insect-borne maladies since the inception of the Army Air Corps.

Later, in the Cold War era, the United States Army developed Venezuelan equine encephalitis (VEE), Eastern equine encephalitis (EEE), and Western equine encephalitis (WEE) vaccines for biological warfare defense. The Army released the stockpiled vaccine for veterinary applications in the early 1970s when the southern U.S. borders and the national equine industry were threatened by the natural spread of VEE from Central America into North America through Mexico.[1]

During the avian velogenic viscerotrophic Newcastle disease outbreak in southern California in 1971-1973, DoD provided assets for an extended period of time to assist in surveillance and eradication of that threat to the poultry industry.[2] The historic record reflects opportunities during which the military provided vital support during agricultural emergencies.

This vital agricultural support may be more difficult to achieve given today's expectation that the U.S. military will defend the U.S. homeland against terrorism while maintaining forces capable of deterring global aggression; and combating aggression in two regions simultaneously. Current U.S. Government expectations for response to agricultural emergencies regarding resource sharing and availability of dedicated DoD assets are based on assumptions based on the much more robust DoD force structure of the early 1970s. This 1970's force included a large standing army, mostly in garrison, and substantial Reserve and Guard

Forces. Both of these were replenished by the military draft and bolstered by internal, organic DoD support services and equipment.

DoD's forces have changed drastically over the past 30 years with changing threats to U.S. national security. Since we are no longer fighting a Cold War, we no longer have a large proportion of our forces in garrison waiting for the proverbial "balloon to go up!" The size of the armed forces has been reduced substantially, and many combat functions have been moved to reserve components. Additionally, many support functions have been civilianized and/or outsourced to contractors entirely.

Yet, expectations for the DoD to provide significant support in national agricultural catastrophes have not waned. In fact, with the perception of an increased agroterrorism threat since September 11, 2001, state and federal expectations have greatly increased of DoD support in an agroterrorist event. Due to the smaller forces that DoD now commands, the Department of Defense may not be able to meet the current expectations of supported state and federal agencies. Most likely, the Active Duty, Reserve, and National Guard forces may only provide small numbers of personnel in specific specialties in response to an agroterrorism event. The availability of DoD resources and forces during a national agricultural emergency should be thoroughly reviewed to determine the actual DoD response capability. This chapter details the current DoD capabilities and manpower that could be utilized during such an agroterrrorist event.

Agroterrorism Response: Training, Organizing, Equipping

In order to assess the ability of the current DoD manpower to respond to an agroterrorism event, the federal directives, memorandum of understanding (MOU) between DoD and the United States Department of Agriculture, and other DoD directives should be reviewed and updated. This chapter focuses primarily on the military medical specialist support areas for an agroterrorism event.

Federal emergency response directives identify the DoD as the lead purveyor of generic logistical support in the case of a national declaration of a natural disaster.[3,4] The most recent MOU concerning DoD agricultural emergency support is dated June 2, 2000, and signed by DoD, the General Services Administration (GSA), and the United States Department of

Agriculture Animal and Plant Health Inspection Service (APHIS), with APHIS acting as the lead agency. The MOU states that "receiving prescribed support in the event that the presence of animal/plant diseases and/or pests constitutes an actual or potential emergency situation as determined by the United States Department of Agriculture Animal and Plant Health Inspection Service. The pest or disease may be endemic or exotic in nature. For the purposes of this MOU, an emergency is defined as any sudden negative economic impact, either perceived or real, such as a Foreign Animal Disease event or a natural disaster that threatens the viability of American animal agriculture and thereby the food supply of the United States."[5] Clearly, an agroterrorism event would be considered a natural disaster. However, the decision as to whether DoD assets will be used lies with the Secretary of Defense.

The U.S. Department of Agriculture and the DoD have also historically shared memoranda of understanding outlining their responsibilities in support of naturally occurring agricultural threats to the nation. The current MOU between DoD and the United States Department of Agriculture regarding military veterinary services assets availability and support is limited to technical support and consultation. Specifically, the MOU pertains to the current organic assets of the U.S. Army Veterinary Services. DoD agrees to provide:

- a senior Army Veterinary Corps Officer to function as a liaison to the Deputy Administrator, Veterinary Services, the United States Department of Agriculture Animal and Plant Health Inspection Service;
- an Army Veterinary Corps Officer as liaison to the Regional Emergency Animal Disease Eradication Organization (READEO) and/or the Veterinary Field Investigation Unit (VFIU);
- military specialists trained in foreign animal disease diagnosis, laboratory diagnosis, epidemiology, microbiology, immunology, entomology, pathology, and public health;
- laboratory support augmentation including Armed Forces Institute of Pathology (AFIP), U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), U.S. Army Center for Health

Promotion and Preventive Medicine (USACHPPM), and the DoD Veterinary Laboratory;

- assistance in the development of response plans; and
- participation in exercises.

While this MOU appears to thoroughly describe the role of DoD support, the training, organization, and equipping of DoD assets and personnel must be further defined through DoD directives. The DoD Veterinary Services Program is described in DoD Directive Number 6400.4, August 22, 2003.[6] Under this directive, the Secretary of the Army is designated as the DoD Executive Agent for the program. Further, the authority to train, organize, and equip Veterinary Services Program assets is delegated to the Surgeon General, U.S. Army. The Surgeon General's responsibilities included under the Veterinary Services Program are to:

- control animal diseases communicable to man;
- provide military veterinarians for research, development, training and education;
- provide laboratory examination of food products; and
- provide other aspects of food safety regulation.

Under today's force structure, the Army Medical Department would provide the preponderance of military specialist support assets such as foreign animal disease diagnosis, animal disease and food borne pathogen laboratory diagnosis, veterinary epidemiology, veterinary microbiology, veterinary immunology, veterinary pathology, and veterinary public health.

DoD Support: Type and Magnitude of Support

Military manpower strengths and force specialty mix are driven by the United States National Security Strategy and National Military Strategy. DoD medical specialist support in national agricultural scenarios will be dependent on the available Active Duty and Reserve Component manpower strengths and specialties, and further modified by DoD

doctrine, interagency agreements, and other competing military requirements in the world.

Active duty military medical assets are generated to support the war-fighter. Therefore, the active duty military medical personnel mix is tied to the size of the overall force structure. Simplistically, more ships at seas means more shipboard medics needed. Fewer military personnel and their families garrisoned overseas equates to less in-country food procurement and a decreased requirement for military veterinary services. Likewise, more deployments of small units to foreign locations require more imbedded military preventive medicine and public health assets, including veterinary services.

Due to the requirements to support the war-fighters, the magnitude of military support in a national agricultural emergency will be limited, regardless of area of military specialty requested. Additionally, manpower intensive organic assets such as clerical support, food service, heavy equipment operators, and logisticians have largely either been transferred to Reserve Components and/or outsourced to contractors entirely. This further reduces military agroterrorist support. Many veterinary medical technical areas inherently specialized in nature (such as laboratory animal medicine and veterinary pathology) have been civilianized or contracted out. To demonstrate, a conceptual view of "then" (1970) and "now" (2005) relative to military veterinary medical assets is depicted in Table 4.1.[7]

Table 4.1 Conceptualization of Changes in Military Force Structure 1970 / 2005

Military Veterinary Corps Personnel			
Component	**Active**	**Reserve**	**Guard**
Army	"400" / "400"	"100s" / "50"	"100s" / **Zero**
Air Force	"300" / **Zero**	"100s" / **Zero**	"100s" / **Zero**

The data have been rounded to the nearest hundred. First numbers indicate force structure in 1970 while second numbers indicate structure in 2005. Although the USAF Veterinary Corps was abolished in the late 1970s, approximately 100 Doctors of Veterinary Medicine are on active duty in today's Air Force serving in a variety of roles (i.e., Military Public

Health Officer, Staff Biomedical Scientist), but not specifically as military veterinarians.

The limited manpower resources DoD has to respond to a national agricultural event can be seen with current staffing data.[8] There were approximately 409 licensed veterinarians on active duty in the Army in 2004. The distribution and title of their professional area of concentration is shown in Table 4.2. Additionally, there were 64 Food Inspection Specialists in the Warrant Officer Ranks.

Table 4.2 U.S. Army Veterinary Corps Manpower 2004

Military Occupational Specialty (MOS)	Title	Number
64A	General Veterinary Officer	166
64B	Veterinary Preventive Medicine	119
64C	Laboratory Animal Medicine	44
64D	Veterinary Pathology	41
64E	Veterinary Comparative Medicine	19
64F	Veterinary Clinical Medicine	20
	Total	409

U.S. Army Veterinary Corps Officers technical consultation and support is further specialized by Board Certification in the specialties recognized by the American Veterinary Medical Association (AVMA). The distribution of Board Certified specialists is shown in Table 4.3. Additionally, approximately 100 of the current active duty Army Veterinary Corps officers have also received United States Department of Agriculture training and certification as Foreign Animal Disease Diagnosticians (FADD).

Table 4.3 U.S. Army Veterinary Corps Board Certification 2004

AVMA Specialty	# Certified
Veterinary Preventive Medicine	110
Veterinary Pathology	29
Laboratory Animal Medicine	31
Veterinary Practitioner	5
Veterinary Internal Medicine	4
Veterinary Emergency Medicine & Critical Care	3
Veterinary Surgery	3
Veterinary Radiology	1
Veterinary Microbiology	2

Another potential military medical personnel resource for agroterrorism response is the small cadre of military medical entomologists assigned to the Army, Navy, and Air Force. Military medical entomologists provide technical guidance to prevent and control disease and damage caused by a variety of medically and economically important insect vectors and pests.[9] By virtue of their everyday responsibilities, they are familiar with agricultural and stored product pest issues. Although small in number, they are a significant technical resource with special skills often transferable to dealing with agroterrorism.

Unfortunately, the Air Force has only 15 individuals in the medical entomology career field. Army and Navy medical entomological capacities are more robust; however, actual numbers are declining since certain categories of medical specialist manpower have been targeted for reduction and/or elimination.[10] To exacerbate their small numbers, medical entomologists also have competing duties. While much of their focus centers on stored product pest control and quality assurance of food products procured by DoD, because they are generalists in preventive medicine and public health, their duties may also be administrative and only tangentially related to entomology.

Other military medical personnel categories may be applicable to an agroterrorism response. For example, Army Environmental Science Officers, Navy Environmental Health Officers, and Air Force Public

Health Officers have some shared skills similar to Army Veterinary Corps Officers. Each of these military occupational specialties, although valuable, constitutes a very small proportion (in the hundreds) of the U.S. military medical personnel. Regardless of which additional military medical assets are identified as relevant to agroterrorism response, focused training and joint exercises with USDA units would be required to make these personnel an effective part of the national response plan.

Conclusions and Recommendations

The DoD is not an endless resource. Our national leaders discovered in the early 1980s that we had a scarcity of retrovirologists to unravel the mysteries of the acquired immune deficiency syndrome (AIDS) epidemic and then in 1999 a scarcity of medical entomologists when faced with West Nile virus. History may repeat itself, and the DoD will find itself ill-prepared. Preparation for agroterrorism prevention and response must become a priority to avoid a national agricultural emergency.

Due to limits in military manpower, the DoD may be able to only provide small numbers of personnel in specific specialties to respond to an agroterrorism event. Despite these potential limitations, the DoD should consider the role of the military in response to challenges with regards to an agroterrorist event. The military must build an infrastructure capable of its obligation to support U.S. national security. Following are recommendations to enable the DoD to more effectively address the agroterrorism manpower concerns.

Redefine Manpower Requirements to Support Agroterrorism Response

The Department of Defense organization structure and manpower assets reflect perceived current and future DoD policy and requirements. Military institutions and organizational structures with unclear relevance to shifting national defense doctrine will need to redefine themselves. In some cases, missions may be deleted or the mission shifted to other agencies in order to support homeland security initiatives. Senior DoD analysts must consider the role of the military in an agroterrorist event and plan manpower assets accordingly. Likely, this will mean increases in

multiple medical specialties and a significant increase in the DoD's involvement in agroterrorism exercises.

Ensure Support of Multiple Federal Agencies for Agroterrorism Defense Research and Response

Agroterrorism issues are multidisciplinary and involve multiple agencies. Efforts must be made to avoid "warehousing" agroterrorism research and response assets in one institution or agency based on the current perception of risk. Additionally, individual skill sets required for agroterrorism research and response may encompass only a small subset of a governmental agency's overall mission. No one expected that the "War on Cancer" and institutional resources of the National Cancer Institute would provide the technical retroviral expertise needed to unravel the complexity of the AIDS infectious disease epidemic. This is one example reflecting the need for the involvement of multiple agencies in complex research and responses. Agroterrorism defense research initiatives at U.S. Army Medical Research Institute of Infectious Diseases and other DoD organizations should be funded and expanded to ensure robust agroterrorism research and response capabilities.

Generate Federal and State Training Plans

Multiple federal, state, and private agencies employ individuals with the skill sets required to respond to an agroterrorism incident. Due to a changing force structure, the DoD manpower assets are less robust than 30 years ago but remain critical to support a major agroterrorist event. A well-funded federal and state cooperative training plan to develop and maintain a resource pool from the DoD, federal, and state agencies for national emergencies would serve the needs of multiple federal agencies.

Address Agroterrorism Coordination and Response Challenges

Agroterrorism events present a potentially unfamiliar response scenario to most in the U.S. Government. For instance, agroterrorism incidents may be insidious and covert hindering detection and response, similar to a bioterrorist incident. In addition, response coordination through the National Incident Management System and Incident Command Structure may not be

familiar to the animal industry and agriculture response systems. Finally, concepts and standard operating procedures for surveillance, epidemiology, quarantine, and mitigation may not be shared widely between the DoD, the United States Department of Agriculture Animal and Plant Health Inspection Service, and state and local response entities to ensure early disease and contamination detection, and containment. Adequate training and exercises should be required to ensure all parties involved in an agroterrorist response are cooperative and coordinated.

DoD veterinary medical and entomological manpower assets and institutions already in place are a valuable resource for a national response to agroterrorism. Increasing these assets will preserve a national resource that is needed for homeland security and national defense, as well as global response to any agroterrorist event. The DoD should conduct an examination of the total military assets to assess the military's overall preparedness to support response to such events.

Notes

1. D.L. Huxsoll, W.C. Patrick, and C.D. Parrott, "Veterinary Services in Biological Disasters," *J. Amer. Vet. Med. Assoc.* 1987, 15 March 190(6): 714-22.

2. E.C. Sharman and J.D. Lamont, "The Velogenic Viscerotropic Newcastle Disease Eradication Program in Southern California," (Presented at the XV World Poultry, Congress, 11-16 August 1974, New Orleans, LA.)

3. Department of Defense Directive Number 3025.1 dated 15 January 1993, USD (P), Military Support to Civil Authorities (MSCA).

4. Department of Defense Directive Number 3025.15, dated 18 February 1997, (ASD (SO/LIC)), Military Assistance to Civil Authorities.

5. MOU among United States Department of Defense (DoD), General Services Administration (GSA), and the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS), dated 2 June 2000 (DoD), 29 August 2000 (GSA), 30 June 2000 (USDA).

6. DoD Directive 6400.4, 22 August 2003, ASD (HA), Subject: DoD Veterinary Services Program.

7. An Assessment of the Veterinary Function of the Armed Forces Final Report, 17 January 1979, (OASD/HA Contract MDA903-79-C-0015, Maximus Inc, McLean VA).

8. Manpower statistics for the Army Veterinary Corps active duty component were provided by Colonel Gary Vroegindewey, Assistant Chief, U.S. Army Veterinary Corps. COL Vroegindewey is a Doctor of Veterinary Medicine and Diplomate American College of Veterinary Preventive Medicine.

9. Military Medical Entomology Programs, On-line, Internet, available from http://www.afpmb.org/links.htm.

10. Conversations Senior Leadership of Air Force and Army Medical Entomology Programs.